ORDER NO. KM492113/3A3

Service Manual

and Technical Guide

Telephone Equipment

Simplified

AUTO-LOGIC

EASA-PHONE

AUTOMATIC TELEPHONE ANSWERING SYSTEM

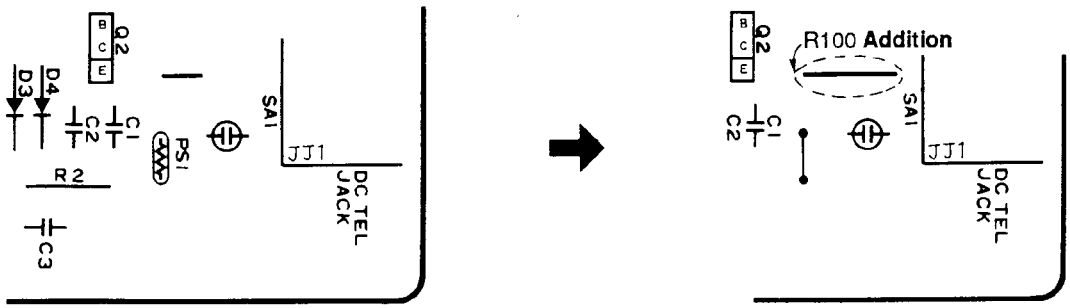
KX-T5001BX

- Please use this manual together with the service manual for model No. KX-T5000 order No. KM49206138C1.
- This Service Manual Indicates the main differences between; Original KX-T5000 and KX-T5001BX.

■ PARTS COMPATION TABLE (Change of original pages 40~42)

Ref. No.	Part No.		Part Name & Description	Pcs/ Set	Remarks
	KX-T5000	KX-T5001BX			
CASSETTE DECK PARTS					
M25	PQFG2D2200Z	**PQFG2D2200Y**	Cam Geear Assembly	2	
M26	PQFW10010Z	**PQFW10010Y**	Erase Head Base	2	
M34	PQUP10065Z	**PQUP10065Y**	P.C.Borad,Reed Switch	1	
M41	XUC12FP-V	**XUC15FY**	Retaining Ring	2	
CABINET PARTS					
K 1	PQKM10006X1	**PQKM10006U1**	Upper Cabinet	1	
K 2	PQYF10003Z1	**PQYF10003Z1**	Lower Cabinet Assembly	1	
ACCESSORIES					
A 1	KX-A11	**KX-A11BMX**	AC Adaptor	1	
A 6	PQQW10040Y	**PQQW10097Z**	Quick Reference Instruction Book	1	
A 7	PQQX10036Y	**PQQX10094Z**	Instruction Book	1	
A 8	---------	**KX-J05X**	Plug	1	Addition
PACKING MATERIAL					
P 1	PQPK10052Y	**PQPK10128Z**	Gift Box	1	
PRINTED CIRCUIT BOARD PARTS					
PCB1	PQWPT5000M	**PQWPT5001BX**	P.C.Board Assembly (RTL)	1	
PS 1	PQRPBC120N	-------	Thermistor	0	Deletion
R 9	ERDS1TJ330	**ERDS1TJ680**	Resistor, 68Ω	1	
R10	ERDS1TJ330	--------	Resistor, 33Ω	0	Deletion
R100	---------	**ERD25T120**	Resistor, 12Ω	1	Addition

■ PRINTED CIRCUIT BOARD (COMPONENT VIEW)



(Original KX-T5000) (Model KX-T5001BX)

Panasonic

ORDER NO. KM49206138C1
F1

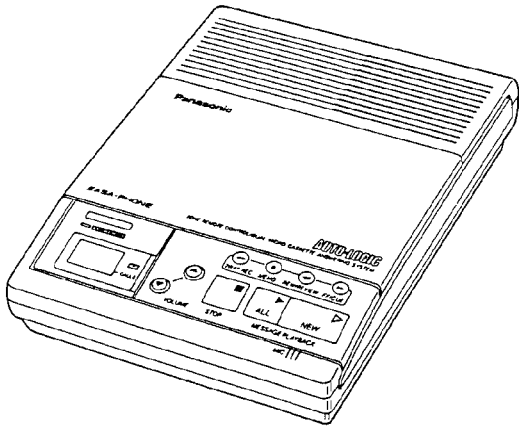
Service Manual

and Technical Guide

AUTO-LOGIC™
EASA-PHONE®
AUTOMATIC TELEPHONE
ANSWERING SYSTEM

Telephone Equipment

KX-T5000



SPECIFICATIONS/ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ
DISASSEMBLY INSTRUCTIONS/ПОРЯДОК РАЗБОРКИ
CPU DATA/ИНФОРМАЦИЯ О ПРОЦЕССОРЕ
MEASUREMENT AND ADJUSTMENT METHOD/ИЗМЕРЕНИЕ И РЕГУЛИРОВКА
TERMINAL GUIDE OF IC`S, TRANSISTORS AND DIODES/ЦОКОЛЕВКА МИКРОСХЕМ, ТРАНЗИСТОРОВ И ДИОДОВ
SCHEMATIC DIAGRAM/ПРИНЦИПИАЛЬНАЯ СХЕМА
PRINTED CIRCUIT BOARD/ПЕЧАТНАЯ ПЛАТА
CASSETTE DECK CONNECTION/СОЕДИНЕНИЯ КАССЕТНОЙ ДЕКИ
BLOCK DIAGRAM/БЛОК-СХЕМА
CASSETTE DECK PARTS LOCATION/РАСПОЛОЖЕНИЕ ЧАСТЕЙ КАССЕТНОЙ ДЕКИ
CABINET AND ELECTRICAL PARTS LOCATION/РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ
EXTENSION CABLE CONNECTING METHOD/ПОДКЛЮЧЕНИЕ СЕРВИСНОГО КАБЕЛЯ
ACCESSORIES AND PACKING MATERIALS/ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ
REPLACEMENT PARTS LIST/СПИСОК ЗАПАСНЫХ ЧАСТЕЙ

Panasonic

■ SPECIFICATIONS

Power Source:	AC adaptor (12 V, DC)/KX-A11
Greeting Message (OGM):	10-minute microcassette (Variable, up to 30 seconds)
Incoming Message (ICM):	30-minute micro cassette selectable recording times (1 MIN/VOX)
Tape Deck:	Logic control dual micro cassette system
Ring Control:	2/4/TOLL SAVER
Power Output	350 mW max. across the monitor speaker
Monitor Speaker:	2″ PM dynamic (8 ohm)
Microphone:	Condenser microphone
Connection:	2 built-in modular jacks, DC-IN jack
Dimensions:	6 3/32″×1 31/32″×8 15/32″ [155 (W)×50 (H)×215 (D)] mm
Weight:	1 lb. 9.4 oz (720 g)

Design and specifications are subject to change without notice.

DISASSEMBLY INSTRUCTIONS

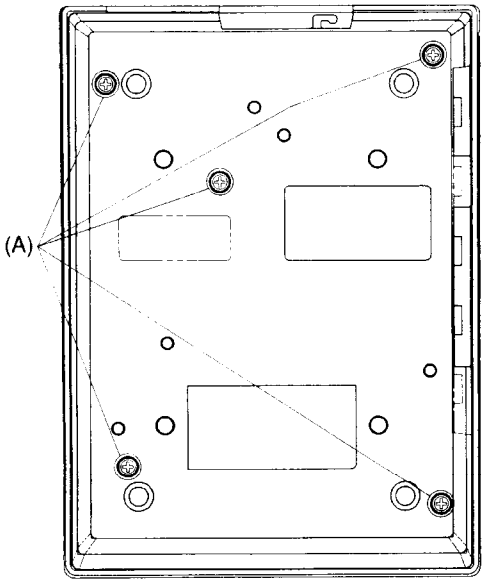


Fig. 5

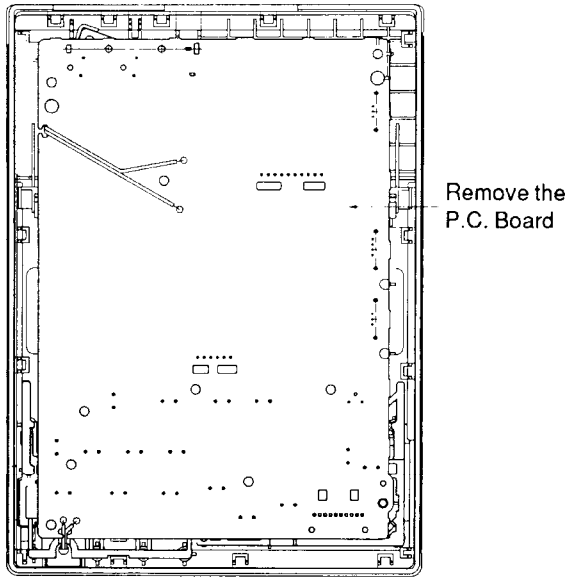


Fig. 6

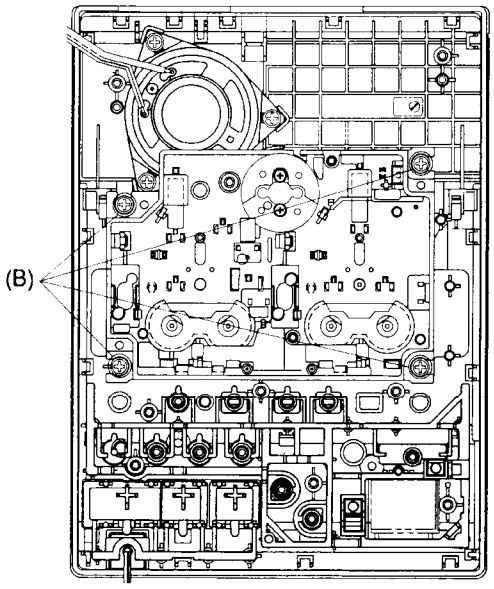


Fig. 7

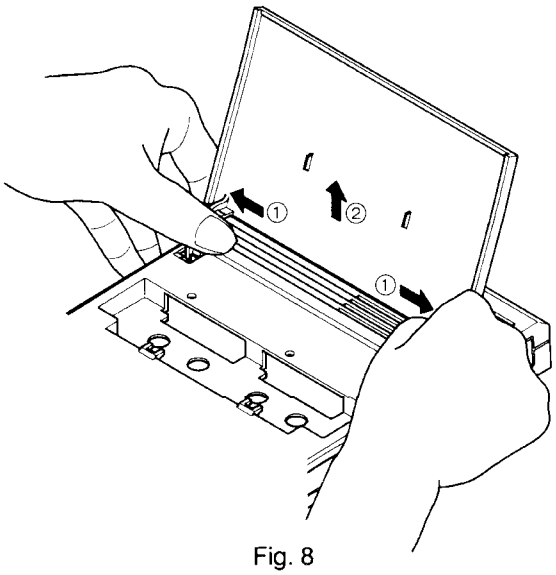
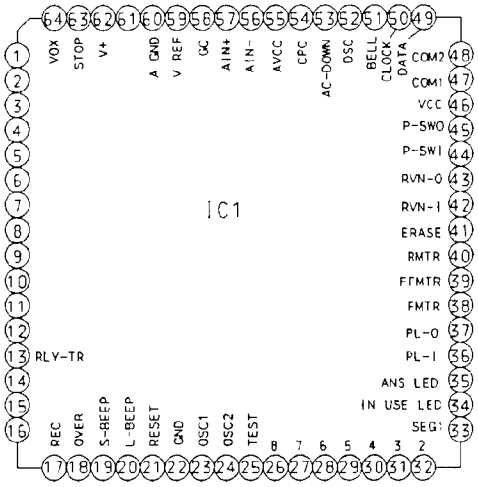


Fig. 8

Procedure	To remove—.	Remove—.	Shown in Fig.—.
1	Lower Cabinet	Screw (3×16) ..... (A)×5	5
2	Printed Circuit Board	Remove the P.C. Board.	6
3	Cassette Deck	Screw (3×10) ..... (B)×4	7
4	Cassette Lid	Remove the Cassette Lid.	8

CPU DATA



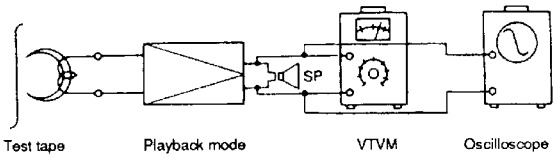
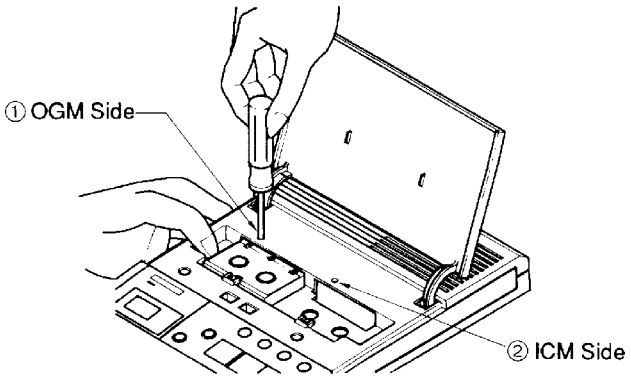
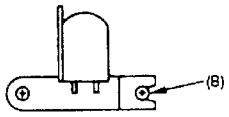
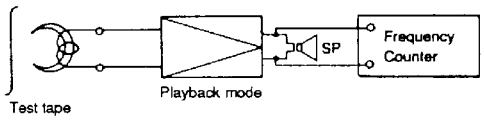
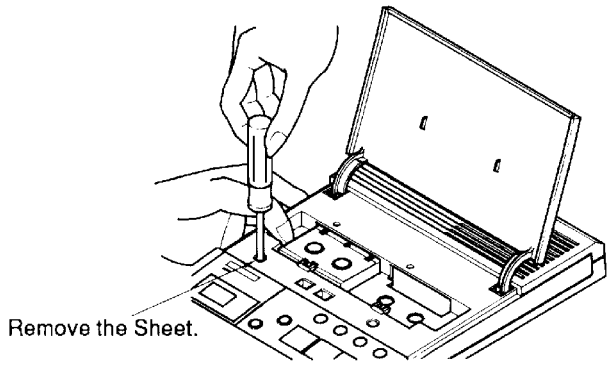
Part No.	PQVI4676A19H
Power Supply:	5±0.5 V
Program ROM:	8K×10 bit
Inside Data RAM:	512×4 bit

Pin No.	Function	IN/OUT	High	Low	AC Down	Stop	Reset
1	in OGM Check	IN		ON	Power Up	Open	Power Up
2	in All Playback, Record	IN		ON	Power Up	Open	Power Up
3	in New Playback, 2Way	IN		ON	Power Up	Open	Power Up
4	in Answer, Memo	IN		ON	Power Up	Open	Power Up
5	in Stop, FF	IN		ON	Power Up	Open	Power Up
6	in Volume, Rewind	IN		ON	Power Up	Open	Power Up
7	in V Down	IN		ON	Power Up	Open	Power Up
8	in ICM Erase, Remote Code	IN		ON	Power Up	Open	Power Up
9	Strob Option	OUT		Active	COMS	Open	Power Up
10	Strob Option	OUT		Active	COMS	Open	Power Up
11	Strob key	OUT		Active	COMS	Open	Power Up
12	Strob key	OUT		Active	COMS	Open	Power Up
13	Relay TR	OUT	ON		COMS	Open	Power Down
14	Volume 3	OUT	Level Up	Level Down	N-CH	Open	Power Down
15	Volume 2	OUT	Level Up	Level Down	N-CH	Open	Power Down
16	Volume 1	OUT	Level Up	Level Down	N-CH	Open	Power Down
17	Record Bias	OUT	ON		Low	Open	Power Down
18	Not Used	-----		GND	Open	Open	Power Down
19	Speaker Beep	OUT			CMOS	Open	Power Down
20	Line Beep	OUT			CMOS	Open	Power Down
21	Reset	IN	Reset		Open	Open	Open
22	GND	-----					
23	OSC 1	IN					
24	OSC 2	OUT					
25	Test	-----					

Pin No.	Function	IN/OUT	High	Low	AC Down	Stop	Reset
26	Segment LCD	OUT			CMOS	Open	Power Up
27	Segment LCD	OUT			CMOS	Open	Power Up
28	Segment LCD	OUT			CMOS	Open	Power Up
29	Segment LCD	OUT			CMOS	Open	Power Up
30	Segment LCD	OUT			CMOS	Open	Power Up
31	Segment LCD	OUT			CMOS	Open	Power Up
32	Segment LCD	OUT			CMOS	Open	Power Up
33	Segment LCD	OUT			CMOS	Open	Power Up
34	In Use LED	OUT		ON	High	Open	Power Up
35	Answer LED	OUT		ON	High	Open	Power Up
36	Plunger ICM	OUT	ON		CMOS	Open	Power Down
37	Plunger OGM	OUT	ON		CMOS	Open	Power Down
38	Play Motor	OUT	ON		Low	Open	Power Down
39	FF Motor	OUT	ON		Low	Open	Power Down
40	Rewind Motor	OUT	ON		Low	Open	Power Down
41	Erase Bias	OUT	ON		Low	Open	Power Down
42	RVN ICM	IN			Open	Open	Power Down
43	RVN OGM	IN			Open	Open	Power Down
44	Position Switch ICM	IN	Newtral		Open	Open	Power Down
45	Position Switch OGM	IN		Newtral	Open	Open	Power Down
46	Vcc	-----					
47	Common 1	OUT			Open	Open	Power Up
48	Common 2	OUT			Open	Open	Power Up
49	Data	OUT			Low	Open	Power Up
50	Clock	OUT			Low	Open	Power Up
51	Bell	IN		Bell	Open	Open	Power Up
52	Dcs	IN	Dsc		Open	Open	Power Up
53	AC down	IN		AC Down	Open	Open	Power Up
54	CPC	IN	CPC		Open	Open	Power Up
55	Analog Vcc	-----					
56	Analog IN$^-$	IN					
57	Analog IN+	IN					
58	Gain Control	OUT					
59	V Reference	IN					
60	Analog GND	-----					
61	Message Alert Switch	IN		ON	Power Up	Open	Power Up
62	Backup Vcc	OUT	ON		High	Open	Power Up
63	Stop	IN	Stop		Open	Open	Power Up
64	Vox	IN		VOX	Power Up	Open	Power Up

MEASUREMENT AND ADJUSTMENT METHOD

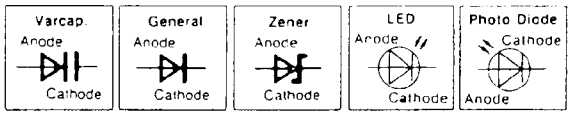
Notes: 1. Make sure the heads are clean.
2. Make sure the capstan and pressure roller are clean.
3. Room temperature for measuring and adjusting: 20±5°C (68±9°F)
4. Test equipments are not treated as replacement parts.

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
1. Head azimuth adjustment	1. Play back the test tape (QZZMWA or PQZZLCT2401A). 2. Adjust screw (B) shown in Fig. B for maximum output at SP terminal. (Test equipment connection is shown below.)   	* Record/playback head  Fig. B
2. Tape speed adjustment	1. Play back the test tape (QZZMWA or PQZZLCT2401A). 2. Adjust VR1 for 2980~3000 Hz on frequency counter reading.   	

■ FOR SCHEMATIC DIAGRAM

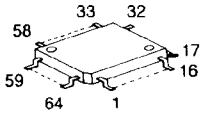
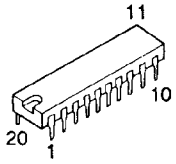
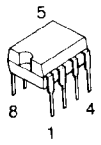
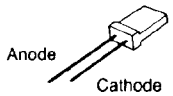
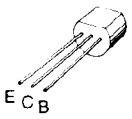
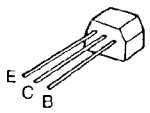
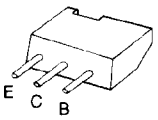
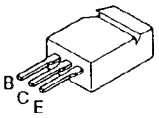
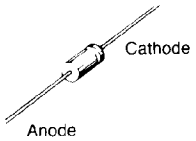
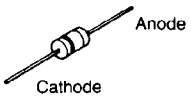
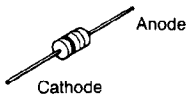
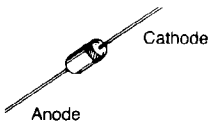
1. SW1: Greeting Check switch.
2. SW2: Greeting Record switch.
3. SW3: 2Way Recording switch.
4. SW4: Memo switch.
5. SW5: Fast Forward/Cue switch.
6. SW6: Rewind/Review switch.
7. SW7: All Message Playback switch.
8. SW8: New Message Playback switch.
9. SW9: Answer On switch.
10. SW10: Stop switch.
11. SW11: Volume Up switch.
12. SW12: Volume Down switch.
13. SW14: Remote Code switch.
14. SW15: Message Alert Selector.
15. SW16: Ring Times Selector.
16. SW17: Recording Time Selector.

Important safety notice
The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards. When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

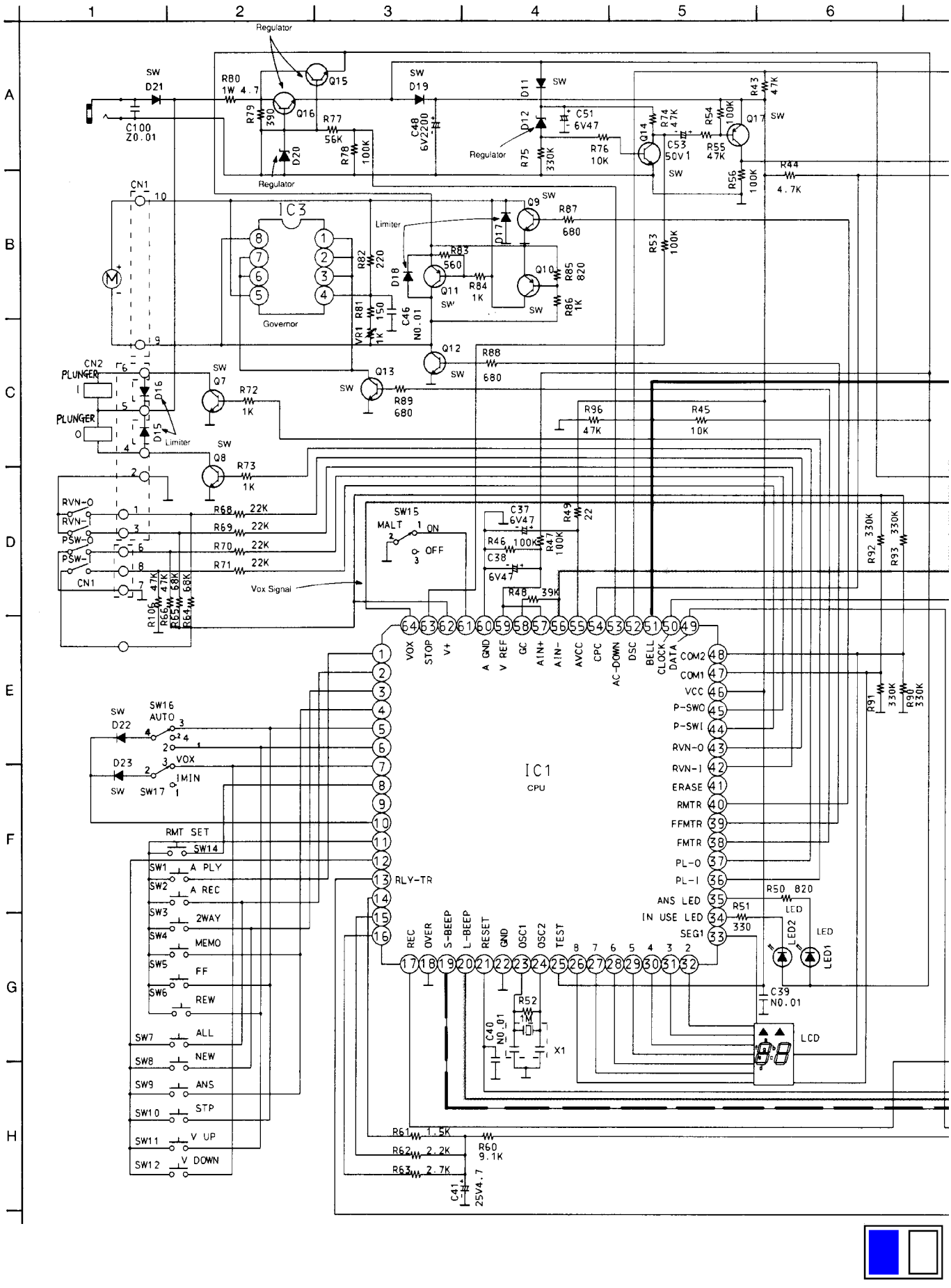


- DC voltage measurements are taken with electronic voltmeter from negative voltage line.
- "ANS SET" Standby position.
- This schematic diagram may be modified at any time with the development of new technology.

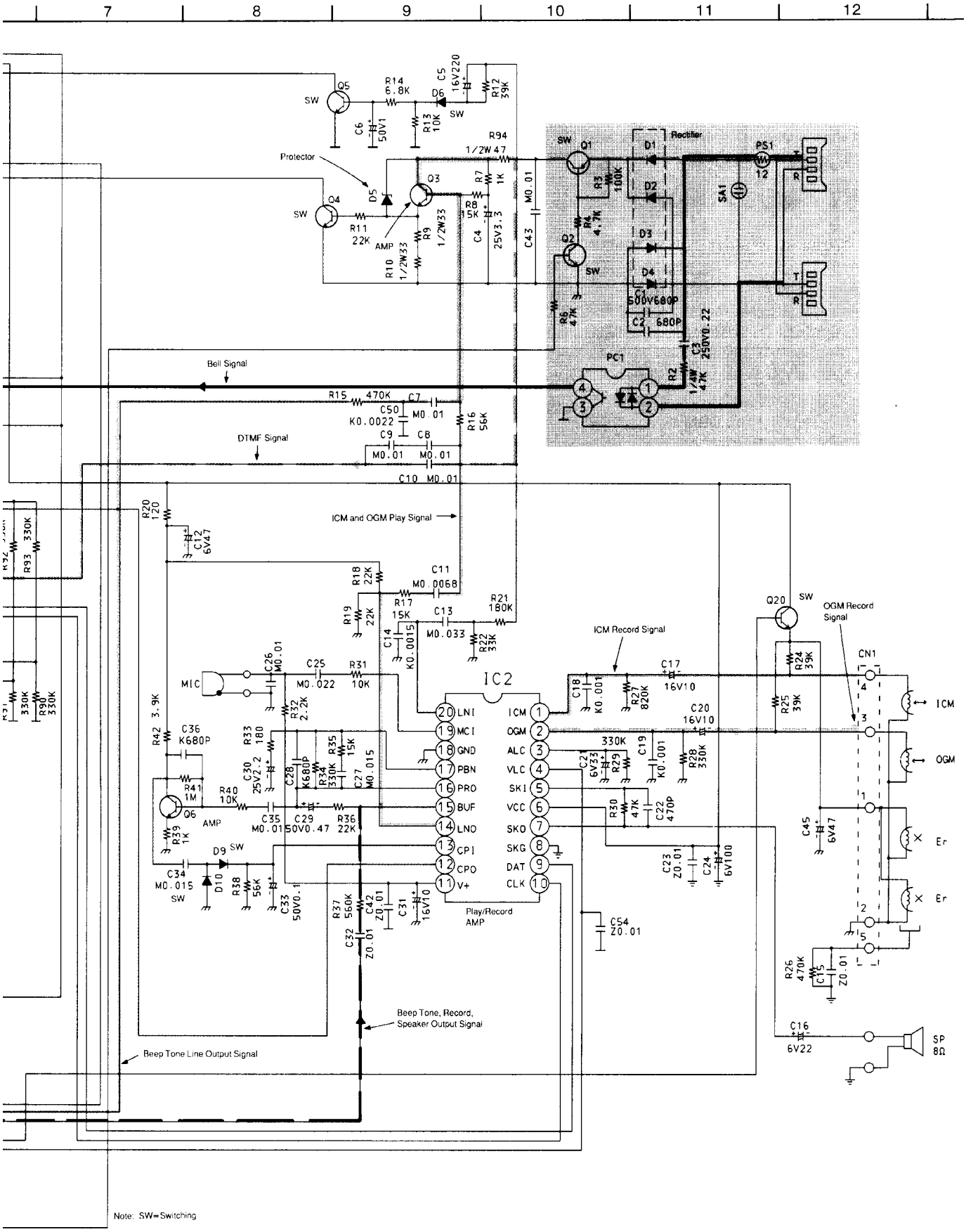
TERMINAL GUIDE OF ICs, TRANSISTORS AND DIODES

 PQVI4676A19H	 PQVISC79100P	 PQVIBA6220	 LN21RCPHV LN31GCPHU
 2SC2120 2SA1625 PQVTKSD261CY	 2SA854 2SC1741S 2SC3330 2SA933	 2SD662B	 2SD2136 2SD2137
 PQVDS5688G	 MA4180	 MA4051	 PQVDMTZ6R8 1SS131 1SS119

SCHEMATIC DIA



C DIAGRAM


7
8
9
10
11
12
Protector
AMP
Bell Signal
DTMF Signal
ICM and OGM Play Signal
Rectifier
IC2
MIC
ICM Record Signal
OGM Record Signal
Play/Record AMP
Beep Tone, Record, Speaker Output Signal
Beep Tone Line Output Signal
ICM
OGM
SP 8Ω
Note: SW=Switching

PRINTED CIRCUIT BOA

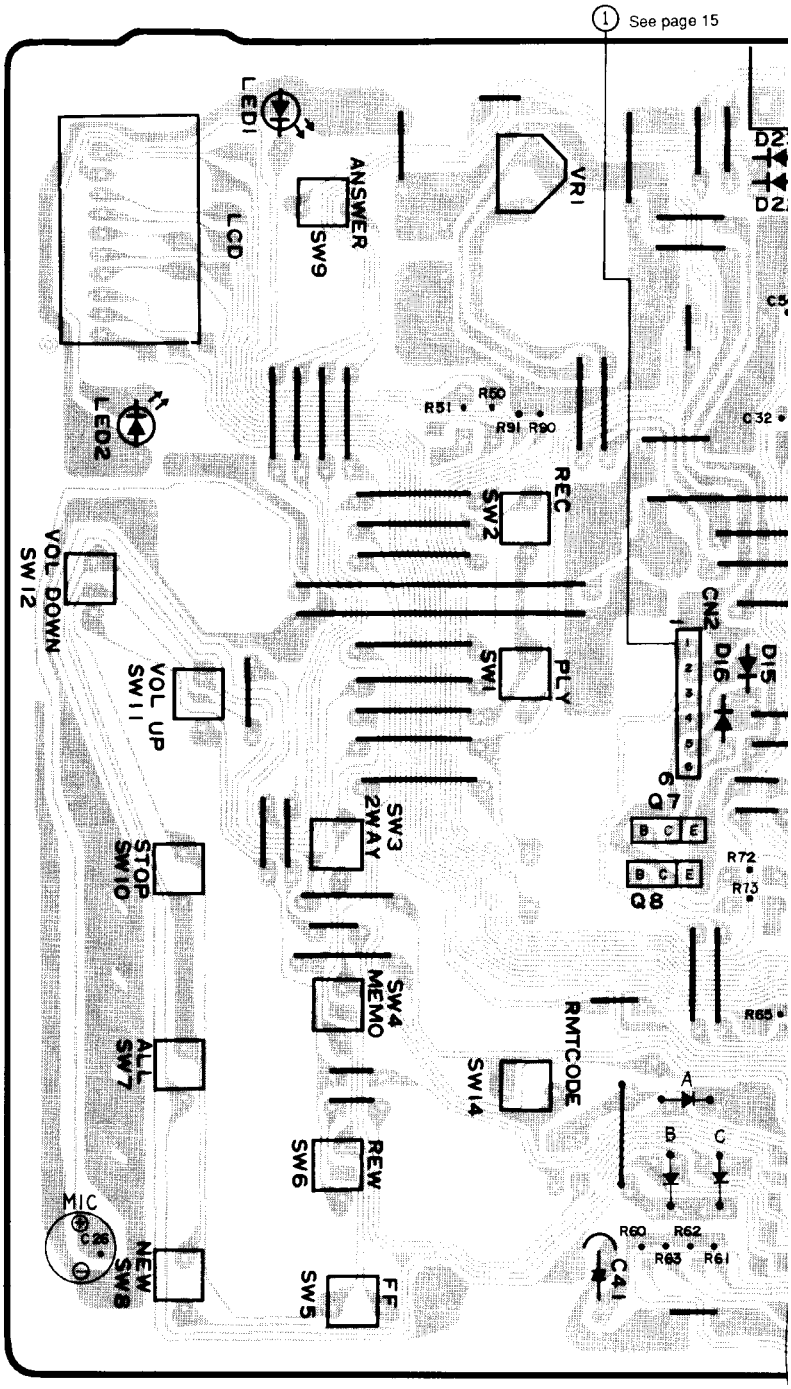
Transistor Voltage

Transistor No.	Q1			Q2			Q3			Q4			Q5		
Pin Name	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	0	0	0	0	0	0	0	0	0	0	5.5	0	0	5.5	0
Transistor No.	Q10			Q11			Q12			Q13			Q14		
Pin Name	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	6.2	6.2	6.2	6.2	6.2	6.2	0	6.2	0	0	5.3	0	0	0	0.6

IC Voltage

IC1			
Pin No.	Voltage	Pin No.	Voltage
1	5.4	33	2.7
2	5.4	34	5.5
3	5.4	35	0.15
4	5.4	36	0
5	5.4	37	0
6	5.4	38	0
7	5.4	39	0
8	5.4	40	0
9	5.4	41	0
10	5.4	42	5.4
11	5.4	43	0
12	5.4	44	5.4
13	0	45	0
14	0	46	5.5
15	0	47	2.7
16	0	48	2.7
17	0	49	0
18	0	50	0
19	0	51	5.1
20	0	52	5.5
21	0	53	4.3
22	0	54	5.5
23	2.5	55	5.5
24	2.6	56	2.9
25	5.5	57	3.1
26	2.7	58	0
27	2.7	59	3.1
28	2.7	60	0
29	2.7	61	0
30	2.7	62	5.5
31	2.7	63	0
32	2.7	64	5.5

IC2		IC3	
Pin No.	Voltage	Pin No.	Voltage
1	1.5	1	0
2	1.5	2	0
3	0	3	0
4	0	4	6.7
5	2.8	5	7.8
6	6.2	6	0
7	2.7	7	0
8	0	8	5.5
9	0		
10	0		
11	5.4		
12	5.4		
13	0		
14	3.2		
15	0.6		
16	2.5		
17	2.5		
18	0		
19	0		
20	0		

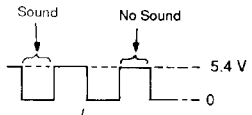


Note: This circuit board may be modified at any time with the development of new technology.

CUIT BOARD (COMPONENT VIEW)

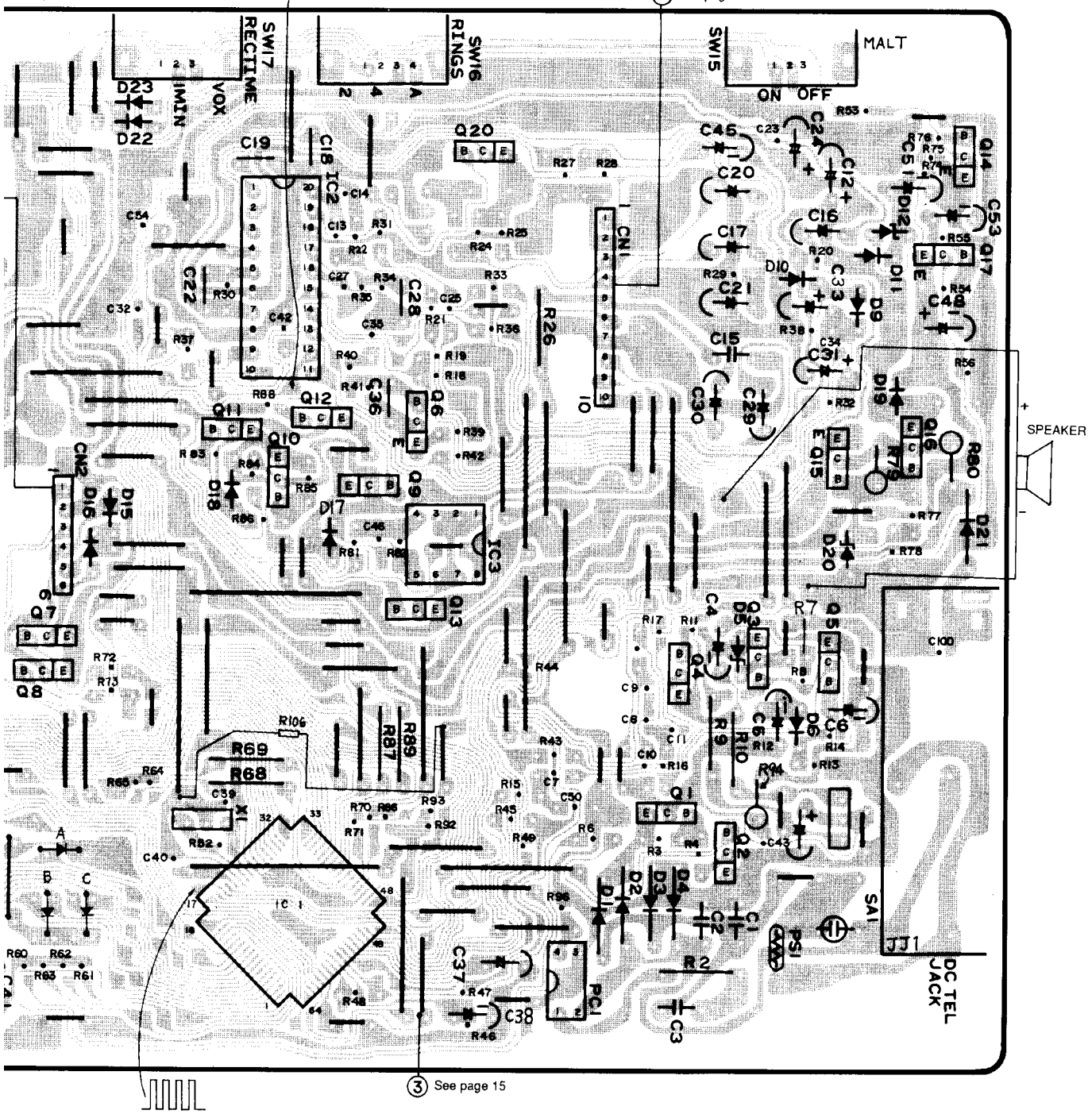
6 | 7 | 8 | 9 | 10 | 11 | 12

	Q5			Q6			Q7			Q8			Q9		
B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
0	0	5.5	0	0.7	3.3	1.3	0	15.5	0	0	15.5	0	0	6.2	0
	Q14			Q15			Q16			Q17			Q20		
B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
0	0	0	0.6	6.1	15	6.7	6.1	15	6.7	5.5	0	5.5	0	6.1	0



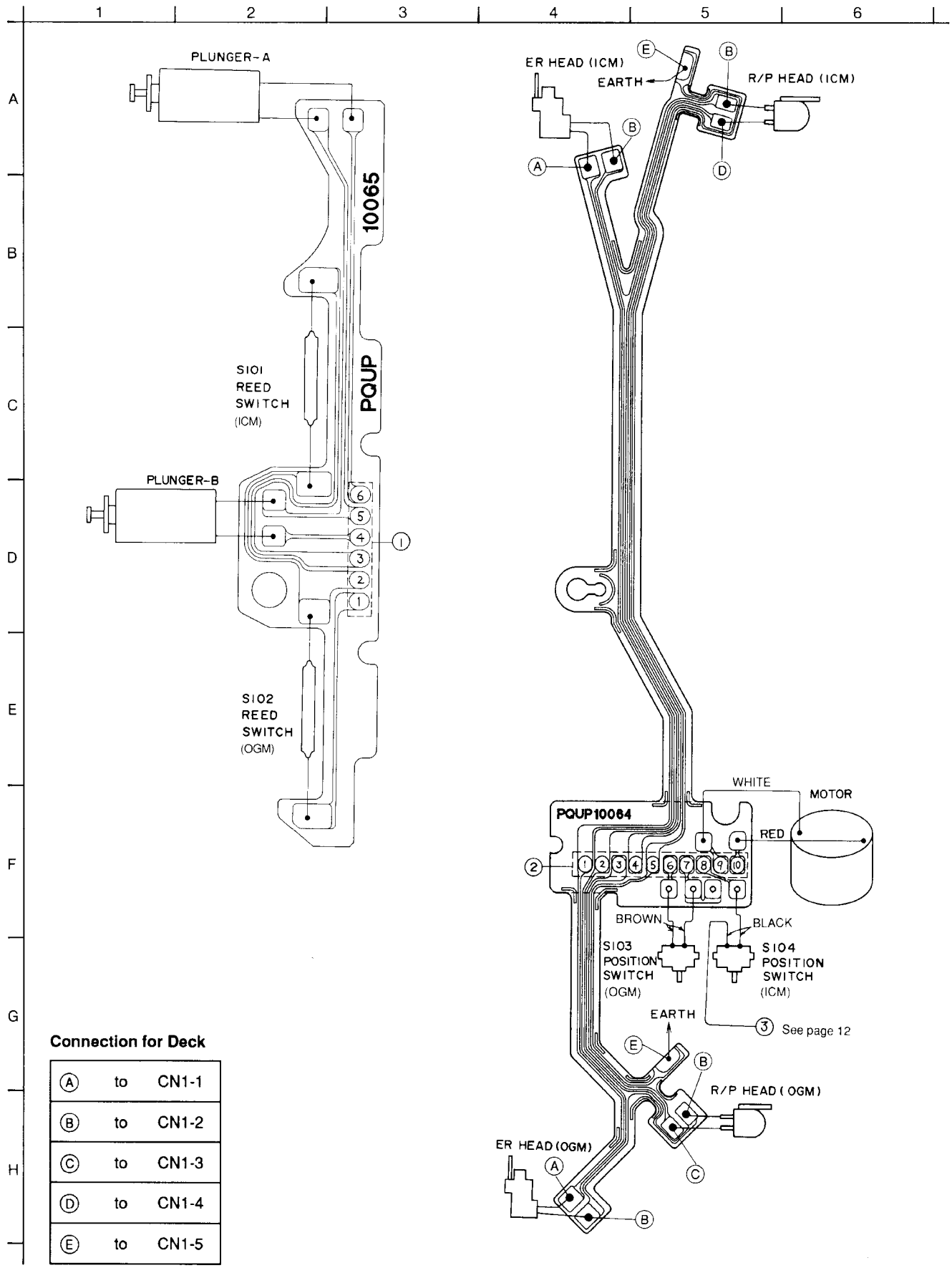
) See page 15

② See page 15



③ See page 15

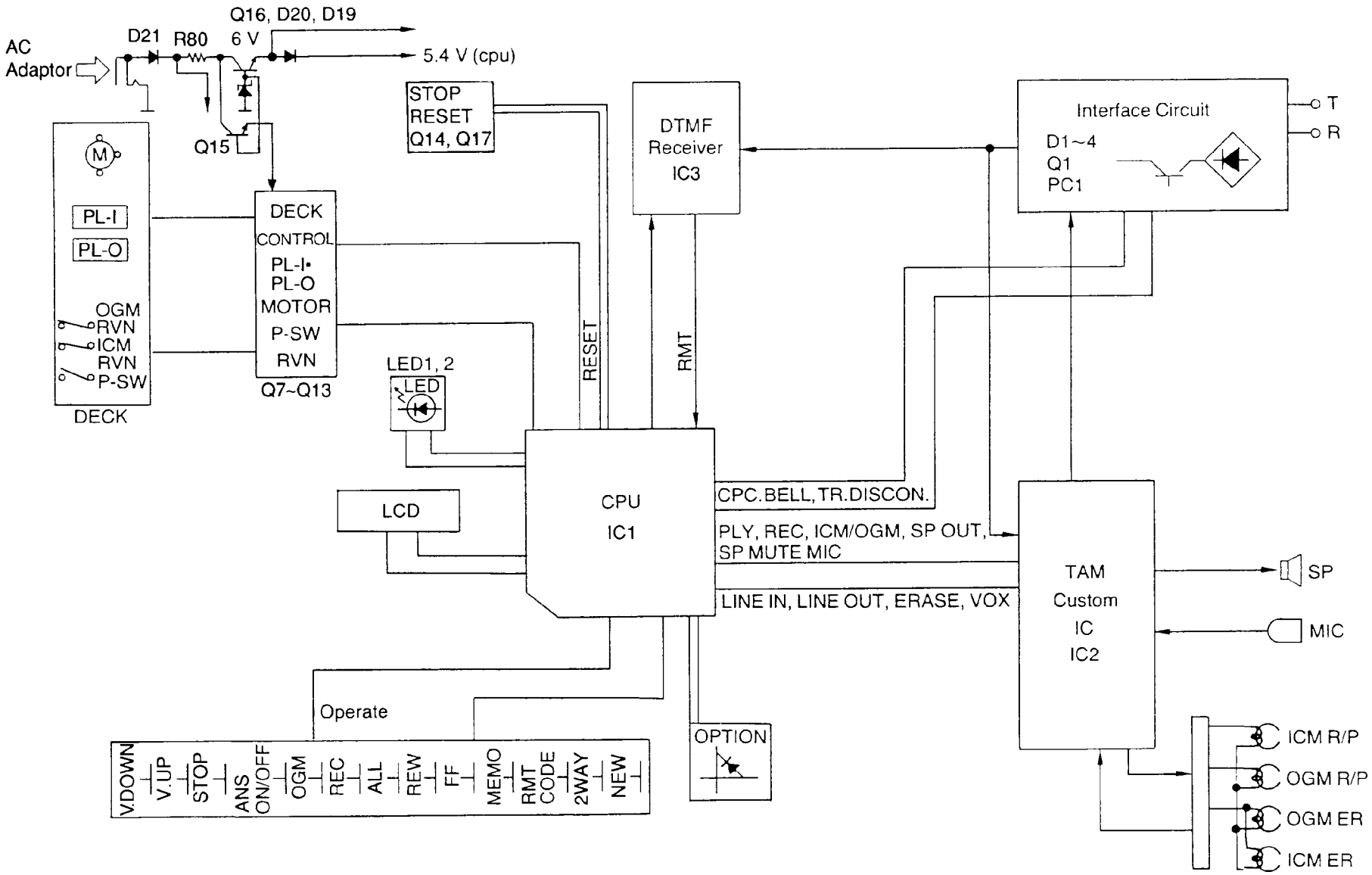
CASSETTE DECK CONNECTION



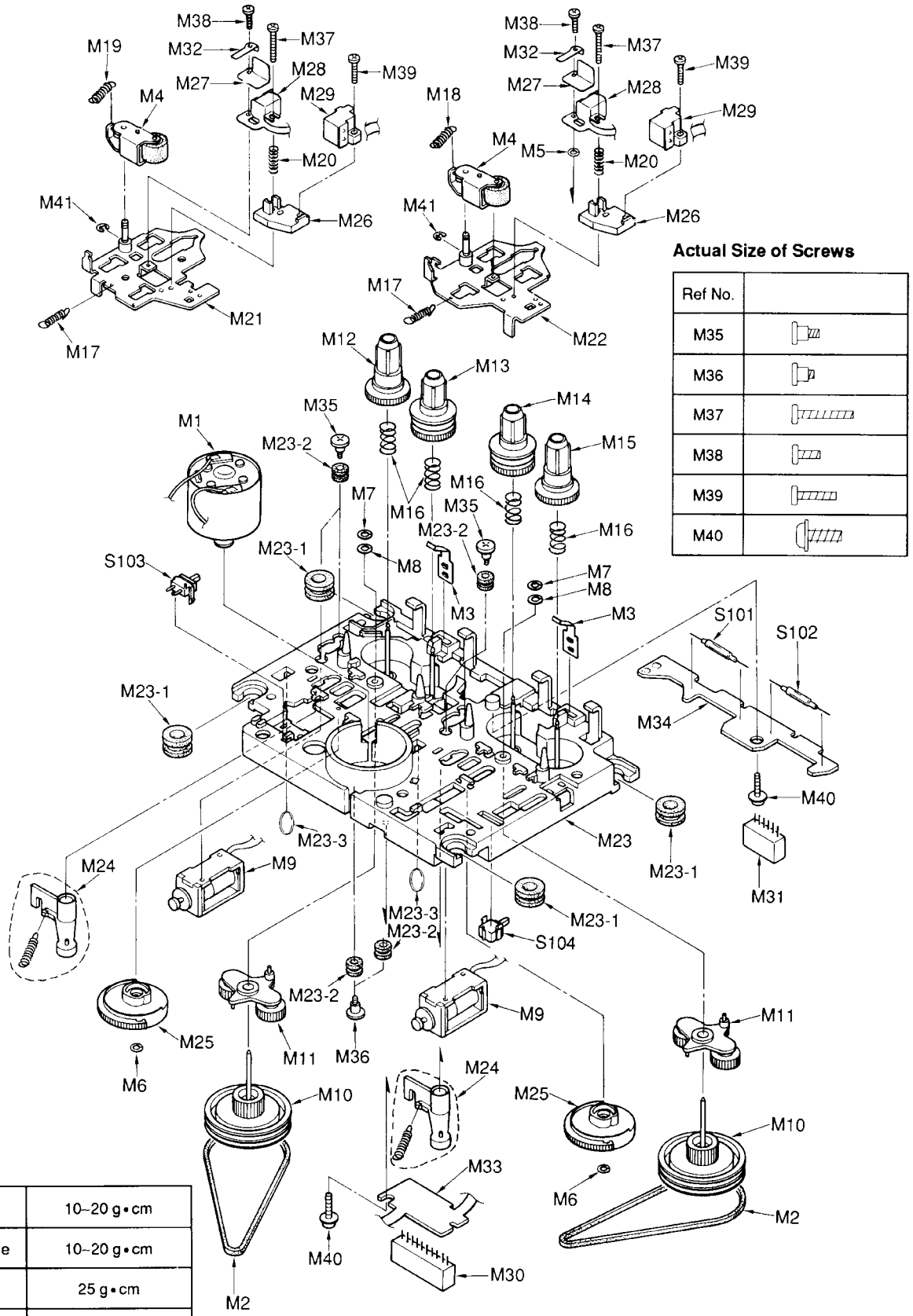
Connection for Deck

Ⓐ	to	CN1-1
Ⓑ	to	CN1-2
Ⓒ	to	CN1-3
Ⓓ	to	CN1-4
Ⓔ	to	CN1-5

BLOCK DIAGRAM



CASSETTE DECK PARTS LOCATION



Actual Size of Screws

Ref No.	
M35	
M36	
M37	
M38	
M39	
M40	

Specifications

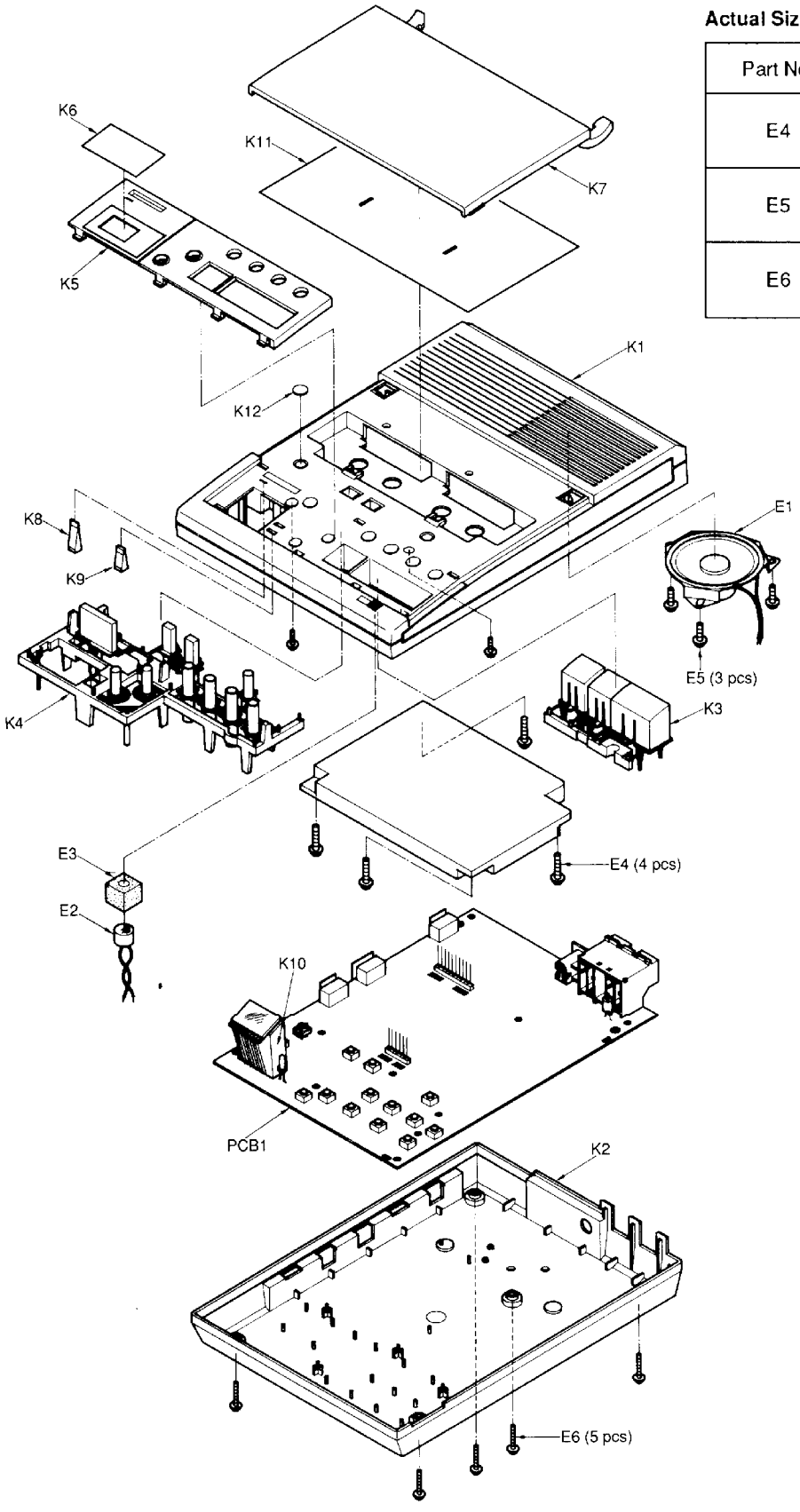
Playback torque	10–20 g • cm
Fast forward torque	10–20 g • cm
Rewind torque	25 g • cm
Back tension	0.5–3.5 g • cm
Wow and flutter	0.65%

Fig. 10

CABINET AND ELECTRICAL PARTS LOCATION

Actual Size of Screws

Part No.	
E4	
E5	
E6	



EXTENSION CABLE CONNECTING METHOD

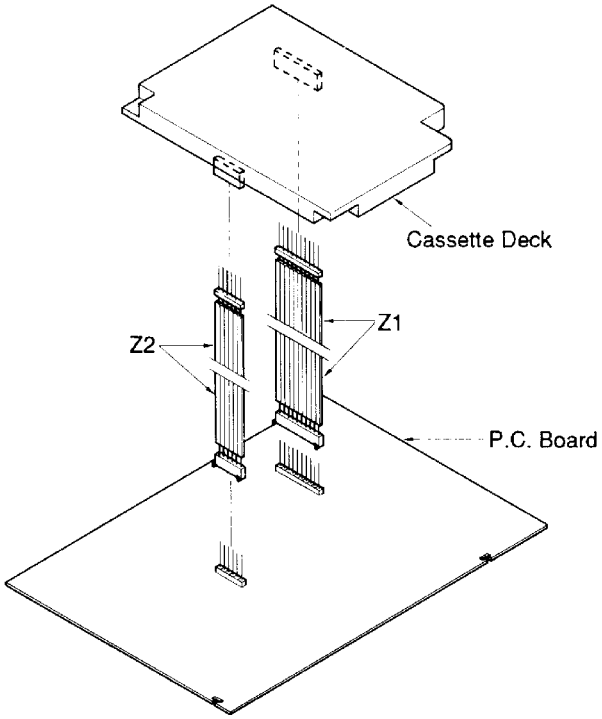
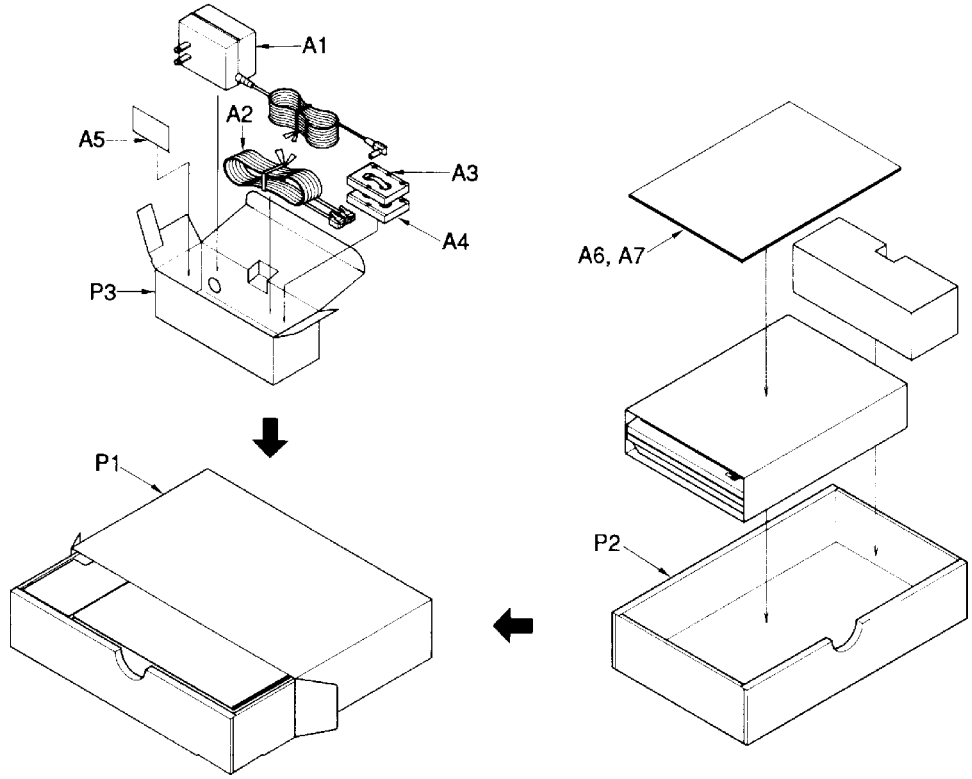


Fig. 13

ACCESSORIES AND PACKING MATERIALS



REPLACEMENT PARTS LIST

Model KX-T5000

1. RTL (Retention Time Limited)
Note: The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
2. Important safety notice.
Components identified by the ⚠ mark special characteristics important for safety. when replacing any of these components, use only manufacture's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.

4. RESISTORS & CAPACITORS
Unless otherwise specified.
All resistors are in ohms(Ω) k=l000Ω,M=l000kΩ
All capacitors are in MICRO FARADS(μF) P=μμF
*Type &Wattage of Resistor
Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor
Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyster
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
		CASSETTE DECK PARTS	
M1	PQFMJD2200Z	MOTOR ASSEMBLY	1
M2	PQFB10002Z	ANGULAR BELT	2
M3	PQFD10009Z	LEAF SPRING	2
M4	PQFIJD2200Z	PINCH LEVER ASSEMBLY	2
M5	PQFN10002Z	WASHER	1
M6	PQFN16Z	WASHER	2
M7	PQFN33Z	WASHER	2
M8	PQFN49Z	WASHER	2
M9	PQFP10001Z	PLUNGER	2
M10	PQFFJD2200Z	FLYWHEEL ASSEMBLY	2
M11	PQFG1D2200Z	GEAR ARM ASSEMBLY	2
M12	PQFR1D2200Z	ICM TAKEUP REEL TABLE ASSEMBLY	1
M13	PQFR2D2200Z	ICM SUPPLY REEL TABLE ASSEMBLY	1
M14	PQFR3D2200Z	OGM TAKEUP REEL TABLE ASSEMBLY	1
M15	PQFR4D2200Z	OGM SUPPLY REEL TABLE ASSEMBLY	1
M16	PQFS10005Z	SPRING, BACK TENSION	4
M17	PQFS10007Z	SPRING, HEAD BASE	2
M18	PQFS10015Z	SPRING, OGM PINCH LEVER	1
M19	PQFS10016Z	SPRING, ICM PINCH LEVER	1
M20	PQFS73Z	SPRING, AZIMUTH	2
M21	PQFD1D2200Z	ICM HEAD BASE ASSEMBLY	1
M22	PQFD2D2200Z	OGM HEAD BASE ASSEMBLY	1
M23	PQFCJD2200Z	MECHANISM CHASSIS ASSEMBLY	1
M23-1	PQFI10001Z	RUBBER CUSHION	4
M23-2	PQFI14Z	RUBBER CUSHION	6
M23-3	PQFE10001Z	RUBBER, RING	2
M24	PQFYJD2200Z	TRIGGER LEVER ASSEMBLY	2
M25	PQFG2D2200Z	CAM GEAR ASSEMBLY	2
M26	PQFW10010Z	ERASE HEAD BASE	2
M27	PQHR321Z	INSULATOR	2
M28	PQJH1M2Y	P/R HEAD	2
M29	PQJH6M2Z	ERASE HEAD	2
M30	PQJS10B32Z	CONNECTOR, 10 PIN	1
M31	PQJS6B30Z	CONNECTOR, 6 PIN	1
M32	PQJT10029Y	TERMINAL	2
M33	PQUP10064Z	P. C. BOARD, FLEXIBLE	1
M34	PQUP10065Z	P. C. BOARD, REED SWITCH	1
M35	PQHD10006Z	SCREW, PLUNGER	4
M36	PQHD15Z	SCREW, MOTOR	2
M37	XSN17+10FN-3	SCREW, AZIMUTH	2
M38	XSN17+4FN-3	SCREW, R/P HEAD	2
M39	XSN17+7FN-A	SCREW, ERASE HEAD	2
M40	XTW26+6F	SCREW, P. C. BOARD	2
M41	XUC12FP-V	RETAINING RING	2
S101	PQSE17Y	REED SWITCH (ICM)	1
S102	PQSE17Y	REED SWITCH (OGM)	1
S103	PQSH1A52Z	SWITCH, POSITION (ICM)	1
S104	PQSH1A52Z	SWITCH, POSITION (OGM)	1
		CABINET PARTS	
K1	PQKM10006X1	UPPER CABINET	1
K2	PQYF10003Z1	LOWER CABINET	1
K3	PQBX10012Z1	BUTTON, STOP etc.	1
K4	PQBX10013W1	BUTTON, FF, REW etc.	1
K5	PQGG10002X1	GRILLE	1
K6	PQGP10003Z1	PANEL	1
K7	PQKK10004Z1	CASSETTE LID	1
K8	PQHR10016Z	SPACER, ANSWER LED	1
K9	PQHR10017Z	SPACER, IN USE LED	1
K10	PQHR10042Z	SPACER, LCD	1
K11	PQQT10076Y	INSTRUCTION LABEL	1
K12	PQGX10003Z1	SHEET	1
		ELECTRICAL PARTS	
E1	PQAS5P13Z	SPEAKER	1
E2	PQJM113Z	MICROPHONE	1
E3	PQMG10001Z	RUBBER, MICROPHONE COVER	1
E4	PQHD10009Z	SCREW	4
E5	XTW3+S10P	SCREW (3 x 10)	3
E6	XTW3+S16P	SCREW (3 x 16)	5
		ACCESSORIES	
A1	KX-A11	AC ADAPTOR	1⚠
A2	PQJA59V	TELEPHONE CORD	1
A3	PQJN1M10AY	CASSETTE TAPE (10 MIN)	1
A4	PQJN1M30AY	CASSETTE TAPE (30 MIN)	1
A5	PQQW10041Z	DIAL CARD	1
A6	PQQW10040Y	QUICK REFERENCE INSTRUCTION BOOK	1
A7	PQQX10036Y	INSTRUCTION BOOK	1
		PACKING MATERIALS	
P1	PQPK10052Y	GIFT BOX	1
P2	PQPN10027Z	CUSHION	1
P3	PQPN10028Y	ACCESSORY BOX	1
		FIXTURES AND TOOLS	
Z1	PQJS11K3Z	EXTENSION CORD, 11 PIN	1
Z2	PQJS6K2Z	EXTENSION CORD, 6 PIN	1
Z3	PQZZLCT2401A	TEST TAPE (See page 7) (or QZZMWA)	1

Note:
1. PQJS11K3Z and PQJS6K2Z are useful for servicing. (They make servicing easy.)

Ref. No.	Part No.	Part Name & Description		Pcs
		PRINTED CIRCUIT BOARD PARTS		
PCB1	PQWPT5000M	P. C. BOARD ASSEMBLY (RTL)		1
		(ICS)		
IC1	PQVI4676A19H	IC		1
IC2	PQVISC79100P	IC		1
IC3	PQVIBA6220	IC		1
		(TRANSISTORS)		
Q1	2SA1625	TRANSISTOR(SI)		1 ⚠
		(or 2SA1776Q or 2SA1776P		
		or 2SB1488P or 2SB1488Q)		
Q2	2SD662B	TRANSISTOR(SI)	S	1 ⚠
Q3	PQVTKSD261CY	TRANSISTOR(SI)		1
Q4	2SC3330	TRANSISTOR(SI)		1
		(or 2SC3311A or 2SC1740S)		
Q5	2SC3330	TRANSISTOR(SI)		1
		(or 2SC3311A or 2SC1740S)		
Q6	2SC3330	TRANSISTOR(SI)		1
		(or 2SC3311A or 2SC1740S)		
Q7	2SC2120	TRANSISTOR(SI)	S	1
Q8	2SC2120	TRANSISTOR(SI)	S	1
Q9	2SC1741S	TRANSISTOR(SI)		1
Q10	2SA854	TRANSISTOR(SI)	S	1
Q11	2SA854	TRANSISTOR(SI)	S	1
Q12	2SC1741S	TRANSISTOR(SI)		1
Q13	2SC1741S	TRANSISTOR(SI)		1
Q14	2SC3330	TRANSISTOR(SI)		1
		(or 2SC3311A or 2SC1740S)		
Q15	2SD2137	TRANSISTOR(SI)		1
Q16	2SD2136	TRANSISTOR(SI)		1
Q17	2SA933	TRANSISTOR(SI)		1
		(or 2SA1317U or 2SA1309A)		
Q20	2SC3330	TRANSISTOR(SI)		1
		(or 2SC3311A or 2SC1740S)		
		(DIODES)		
D1	PQVDS5688G	DIODE(SI)		1 ⚠
D2	PQVDS5688G	DIODE(SI)		1 ⚠
D3	PQVDS5688G	DIODE(SI)		1 ⚠
D4	PQVDS5688G	DIODE(SI)		1 ⚠
D5	MA4180	DIODE(SI)	S	1
D6	1SS131	DIODE(SI)	S	1
D9	1SS131	DIODE(SI)	S	1
D10	1SS131	DIODE(SI)	S	1
D11	1SS131	DIODE(SI)	S	1
D12	MA4051	DIODE(SI)		1
D15	1SS119	DIODE(SI)		1
D16	1SS119	DIODE(SI)		1
D17	1SS119	DIODE(SI)		1
D18	1SS119	DIODE(SI)		1
D19	1SS119	DIODE(SI)		1
D20	PQVDMTZ6R8	DIODE(SI)		1
D21	PQVDS5688G	DIODE(SI)		1
D22	1SS131	DIODE(SI)	S	1
D23	1SS131	DIODE(SI)	S	1
		(LEDS)		
LED1	LN21RCPHV	LED		1
LED2	LN31GCPHU	LED		1

Ref. No.	Part No.	Part Name & Description		Pcs
		(JACK)		
JJ1	PQJJ3H001Z	JACK, TELEPHONE, DC IN		1 ⚠
		(SWITCHES)		
SW1	EVQ22405K	SWITCH, GREETING CHECK		1
SW2	EVQ22405K	SWITCH, GREETING RECORD		1
SW3	EVQ22405K	SWITCH, 2 WAY RECORDING		1
SW4	EVQ22405K	SWITCH, MEMO		1
SW5	EVQ22405K	SWITCH, FAST FORWARD/CUE		1
SW6	EVQ22405K	SWITCH, REWIND/REVIEW		1
SW7	EVQ22405K	SWITCH, ALL MESSAGE PLAYBACK		1
SW8	EVQ22405K	SWITCH, NEW MESSAGE PLAYBACK		1
SW9	EVQ22405K	SWITCH, ANSWER ON		1
SW10	EVQ22405K	SWITCH, STOP		1
SW11	EVQ22405K	SWITCH, VOLUME UP		1
SW12	EVQ22405K	SWITCH, VOLUME DOWN		1
SW13	Not Used			
SW14	EVQ22405K	SWITCH, REMOTE CODE		1
SW15	PQSS2A27Z	SWITCH, MESSAGE ALERT SELECTOR		1
SW16	PQSS3A17Z	SWITCH, RING TIMES SELECTOR		1
SW17	PQSS2A27Z	SWITCH, RECORDING TIME SELECTOR		1
		(CONNECTORS)		
CN1	PQJP06A15Z	CONNECTOR, 6 PIN		1
CN2	PQJP10A16Z	CONNECTOR, 10 PIN		1
		(OTHERS)		
SA1	PQVDSAE310F1	VARISTOR (SURGE ABSORBER)		1 ⚠
VR1	EVNDXAA03B13	VARIABLE RESISTOR, 1KΩ		1
LCD	PQADP2K6011A	LIQUID CRYSTAL DISPLAY		1
PC1	PQVIPC814K	PHOTO ELECTRIC TRANSDUCER	S	1 ⚠
PS1	PQRPBC120N	THERMISTOR		1 ⚠
X1	PQVBT4.0G2	CRYSTAL	S	1
		(RESISTORS)		
R1	Not Used			
R2	ERD25TJ473	47K		1 ⚠
R3	PQ4R18XJ104	100K		1 ⚠
R4	PQ4R18XJ472	4.7K		1 ⚠
R5	Not Used			
R6	PQ4R18XJ473	47K		1
R7	ERDS2TJ102	1K		1
R8	PQ4R10XJ153	15K		1
R9	ERDS1TJ330	33		1
R10	ERDS1TJ330	33		1 ⚠
R11	PQ4R10XJ223	22K		1 ⚠
R12	PQ4R18XJ393	39K		1
R13	PQ4R18XJ103	10K		1
R14	PQ4R10XJ682	6.8K		1
R15	PQ4R18XJ474	470K		1
R16	PQ4R18XJ563	56K		1
R17	PQ4R10XJ153	15K		1
R18	PQ4R18XJ223	22K		1
R19	PQ4R18XJ223	22K		1
R20	PQ4R18XJ121	120		1
R21	PQ4R18XJ184	180K		1
R22	PQ4R18XJ333	33K		1
R23	Not Used			
R24	PQ4R18XJ393	39K		1
R25	PQ4R18XJ393	39K		1
R26	ERDFS1TJ474	470K		1
R27	PQ4R18XJ824	820K		1
R28	PQ4R18XJ334	330K		1
R29	PQ4R18XJ334	330K		1
R30	PQ4R18XJ473	47K		1
R31	PQ4R18XJ103	10K		1
R32	PQ4R18XJ222	2.2K		1
R33	PQ4R18XJ181	180		1

Ref. No.	Part No.	Part Name & Description	Pcs
R34	PQ4R10XJ334	330K	1
R35	PQ4R10XJ153	15K	1
R36	PQ4R18XJ223	22K	1
R37	PQ4R18XJ564	560K	1
R38	PQ4R18XJ563	56K	1
R39	PQ4R18XJ102	1K	1
R40	PQ4R10XJ103	10K	1
R41	PQ4R10XJ105	1M	1
R42	PQ4R18XJ392	3.9K	1
R43	PQ4R18XJ473	47K	1
R44	PQ4R10XJ472	4.7K	1
R45	PQ4R18XJ103	10K	1
R46	PQ4R10XJ104	100K	1
R47	PQ4R10XJ104	100K	1
R48	PQ4R18XJ393	39K	1
R49	PQ4R10XJ220	22	1
R50	PQ4R18XJ821	820	1
R51	PQ4R18XJ331	330	1
R52	PQ4R10XJ105	1M	1
R53	PQ4R10XJ104	100K	1
R54	PQ4R18XJ104	100K	1
R55	PQ4R10XJ473	47K	1
R56	PQ4R10XJ104	100K	1
R57	Not Used		
R58	Not Used		
R59	Not Used		
R60	PQ4R10XF9101	9.1K	1
R61	PQ4R10XJ152	1.5K	1
R62	PQ4R10XJ222	2.2K	1
R63	PQ4R10XJ272	2.7K	1
R64	PQ4R10XJ683	68K	1
R65	PQ4R10XJ683	68K	1
R66	PQ4R10XJ473	47K	1
R67	Not Used		
R68	ERD25TJ223	22K	1
R69	ERD25TJ223	22K	1
R70	PQ4R10XJ223	22K	1
R71	PQ4R10XJ223	22K	1
R72	PQ4R18XJ102	1K	1
R73	PQ4R18XJ102	1K	1
R74	PQ4R10XJ473	47K	1
R75	PQ4R10XJ334	330K	1
R76	PQ4R10XJ103	10K	1
R77	PQ4R18XJ563	56K	1
R78	PQ4R18XJ104	100K	1
R79	ERDS1TJ391	390	1
R80	PQRQ1VJ4R7	4.7	1
R81	PQ4R18XJ151	150	1
R82	PQ4R10XJ221	220	1
R83	PQ4R18XJ561	560	1
R84	PQ4R18XJ102	1K	1
R85	PQ4R18XJ821	820	1
R86	PQ4R18XJ102	1K	1
R87	ERD25TJ681	680	1
R88	PQ4R10XJ681	680	1
R89	ERD25TJ681	680	1
R90	PQ4R10XJ334	330K	1
R91	PQ4R10XJ334	330K	1
R92	PQ4R10XJ334	330K	1
R93	PQ4R10XJ334	330K	1
R94	ERDFS1TJ470	47	1 ⚠
R95	Not Used		
R96	PQ4R10XJ473	47K	1
R106	ERDS2TJ473	47K	1

Ref. No.	Part No.	Part Name & Description	Pcs
		(CAPACITORS)	
C1	ECKD2H681KB	680P	1 ⚠
C2	ECKD2H681KB	680P	1 ⚠
C3	ECQE2224KF	0.22	1 ⚠
C4	ECEA1HU3R3	3.3	1
C5	ECEA1CU221	220	1
C6	ECEA1HU010	1	1
C7	ECUV1H103KB	0.01	1
C8	PQCUV1H103KB	0.01	1
C9	PQCUV1H103KB	0.01	1
C10	ECUV1H103KB	0.01	1
C11	PQCUV1H682KB	0.0068	1
C12	ECEA1EU470	47	1
C13	ECUV1H333JC	0.033	1
C14	PQCUV1H152KB	0.0015	1
C15	ECKTAE103ZF	0.01	1
C16	ECEA0JU220	22	1
C17	ECEA1HU100	10	1
C18	PQCBC1H102KB	0.001	1
C19	PQCBC1H102KB	0.001	1
C20	ECEA1HU100	10	1
C21	ECEA1VU330	33	1
C22	PQCBC1H471KB	470P	1
C23	ECUV1H103KB	0.01	1
C24	ECEA1AU101	100	1
C25	ECUV1H223MD	0.022	1
C26	PQCUV1H103KB	0.01	1
C27	PQCUV1E153MD	0.015	1
C28	PQCBC1H681KB	680P	1
C29	ECEA1HUR47	0.47	1
C30	ECEA1HU2R2	2.2	1
C31	ECEA1HU100	10	1
C32	PQCUV1H103KB	0.01	1
C33	ECEA1HU0R1	0.1	1
C34	PQCUV1E153MD	0.015	1
C35	ECUV1H103KB	0.01	1
C36	PQCBC1H681KB	680P	1
C37	ECEA1CKS470	47	1
C38	ECEA1CKS470	47	1
C39	PQCUV1H103KB	0.01	1
C40	PQCUV1H103KB	0.01	1
C41	ECEA1HKS4R7	4.7	1
C42	ECUV1H103KB	0.01	1
C43	PQCUV1H103KB	0.01	1
C44	Not Used		
C45	ECEA1EU470	47	1
C46	PQCUV1H103KB	0.01	1
C47	Not Used		
C48	ECEA1AU222	2200	1
C49	Not Used		
C50	ECUV1H222J	0.0022	1
C51	ECEA1EU470	47	1
C52	Not Used		
C53	ECEA1HU010	1	1
C54	ECUV1H103KB	0.01	1
C100	PQCUV1H103KB	0.01	1